University of Connecticut – Avery Point

MATH 2110Q (Multivariable Calculus)
Fall 2026

Course Outline

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Office Hours: M/W: 9:40AM-10:10AM & 12:10PM-1:10PM

Excluding materials for purchase, syllabus information may be subject to change. The most up-to-date syllabus is located within the course in HuskyCT.

Course Description: Two- and three-dimensional vector algebra, calculus of functions of several variables, vector differential calculus, line and surface integrals.

Prerequisites: MATH 1132Q or a score of 4 or 5 on the Advanced Placement Calculus BC exam. Recommended preparation: a grade of C- or better in MATH1132Q. Not open for credit to students who have passed MATH 2130Q or 2143Q.

Textbook Information: The textbook for this course is *Open Stax: Calculus Volume 3*. It is available using the link on HuskyCT or here: https://openstax.org/details/books/calculus-volume-3/

Course Objectives: Successful completion of this course will require you to learn to:
1. Vector calculus and applications in three-dimensional space.
2. Visualize surfaces and curves in three-dimensional space.
3. Evaluate double and triple integrals in cartesian, polar, cylindrical, and spherical coordinates.
4. Visualize vector fields and evaluate line integrals over vector fields.
5. The meaning and applications of curl and divergence.
6. Apply the Fundamental Theorem of Line Integrals, Green's Theorem, Stoke's Theorem, and the Divergence Theorem.

Software/Technical Requirements: HuskyCT/Blackboard, Adobe Acrobat Reader, Dedicated access to high-speed internet.
- **NOTE**: This course has NOT been designed for use with mobile devices.
- This course uses the learning management platform, HuskyCT. If you have difficulty accessing HuskyCT, you have access to the in person/live person support options available during regular business hours through the Help Center.
- Student technology training is now available in a new HuskyCT short course created by students for students. It will prepare you to use the IT systems and services that you will use throughout your time at UConn, whether learning online or on-campus. It is available at https://lms.uconn.edu/ultra/courses/_80016_1/cl/outline.

Policies & Resources:
1. **Make-Up/Late Policy:** Course due dates are identified in this syllabus and on HuskyCT. Deadlines are based on Eastern Time unless otherwise specified. In fairness to everyone, there are generally **no** make-ups and **no** extensions for written assignments and exams. Only extreme situations with an officially documented excuse will allow you to make up an evaluation/assessment. Whenever possible, these excuses must be presented before the evaluation/assessment is due or is supposed to take place in class.
2. **Academic Integrity:** This course expects all students to act in accordance with UConn's Policy on Academic, Scholarly, and Professional Integrity and Misconduct (ASPIM) (https://policy.uconn.edu/2023/07/11/academic-scholarly-and-professional-integrity-and-misconduct-aspim-policy-on/). In mathematics, this means that all work that you turn in should be written up independently by you, in your own words, and should represent your honest understanding of the material. On exams and quizzes, it should be noted in particular that this means you must not consult any sources or materials: neighbours' papers, calculators, and any notes, books, or electronic devices are off-limits. Violations of this policy may range from a zero on the assignment to a grade of F in the course. If you have questions about academic integrity or intellectual property, you should consult with your instructor. Additionally, consult UConn's guidelines for academic integrity (http://community.uconn.edu/the-student-code-appendix-a/).
    a. **Academic Integrity Warning: You may not post any assessment in the course on Chegg or any other website. Assessments in this course are considered as intellectual property of UCONN and it is therefore a copyright infringement to post or copy assessments in any form.**

3. **Resources for Students Experiencing Distress:** The Uuniversity of Connecticut is committed to supporting students in their mental health, their psychological and social well-being, and their connection to their academic experience and overall wellness. The university believes that academic, personal, and professional development can flourish only when each member of our community is assured equitable access to mental health services. The university aims to make access to mental health attainable while fostering a community reflecting equity and diversity and understands that good mental health may lead to personal and professional growth, greater self-awareness, increased social engagement, enhanced academic success, and campus and community involvement
    a. Students who feel they may benefit from speaking with a mental health professional can find support and resources through the **Student Health and Wellness-Mental Health** (SHaW-MH) office. Through SHaW-MH, students can make an appointment with a mental health professional and engage in confidential conversations or seek recommendations or referrals for any mental health or psychological concern.
    b. Mental health services are included as part of the university's student health insurance plan and also partially funded through university fees. If you do not have UConn's student health insurance plan, most major insurance plans are also accepted. Students can visit the **Student Health and Wellness-Mental Health located in Storrs on the main campus in the Arjona Building, 4th Floor,** or contact the office at **(860) 486-4705, or https://studenthealth.uconn.edu/** for services or questions**.**

4. **Accommodations for Extended Absences:** Please stay home if you are feeling ill and please go home if you are in class and start to feel ill. If illness prevents you from attending class, it is your responsibility to notify me as soon as possible. You do not need to disclose the nature of your illness, however, you will need to work with me to determine how you will complete coursework during your absence. If life circumstances are affecting your ability to focus on courses and your UConn experience, students can email the Dean of Students at dos@uconn.edu to request support. Regional campus students should email the Student Services staff at their home campus to request support.

5. **Accommodations for Students with Disabilities:** The University of Connecticut is committed to protecting the rights of individuals with disabilities and assuring that the learning environment is accessible. Students who require accommodations should contact the Center for Students with Disabilities, Wilbur Cross Building Room 204, (860) 486-2020 or http://csd.uconn.edu/.

Grading

Online Homework	6%*
In-Class Quizzes	15%
Exam 1	18%
Exam 2	18%
Exam 3	18%
Final Exam	25%**

Grade	Percentage	Grade	Percentage
A	93-100	C	73-76
A-	90-92	C-	70-72
B+	87-89	D+	67-69
B	83-86	D	63-66
B-	80-82	D-	60-62
C+	77-79	F	59 & below

*__Homework Weighting:__ Homework accounts for 6% of the course grade. At the end of the semester, each student's course grade will be calculated both with and without the homework component (transferring its 6% weight to the final exam). The higher of the two course grades will be recorded.

**__Exam Weighting:__ If your score on the cumulative final exam is higher than your lowest score on Exams 1–3, your final exam percentage will replace that lowest exam percentage. The final exam will still count for its original 25% of the course grade.

- **Online Homework:** Online homework is assigned and completed through **HuskyCT**. There will be homework assignments for each section in the outline below. Homework is designed to reinforce the concepts covered in class and provide regular practice with the material. Each homework question allows essentially unlimited attempts so you are encouraged to keep working until you understand the problem and arrive at the correct solution. After each attempt, you will be told whether each answer is correct or not. Your highest attempt will be the one that counts towards your final grade.
  - Online assignments for sections covered in a given week are **due the following Monday at 11:59PM**.
  - **Note:** As described in the grading policy, each student's course grade will be calculated both with and without the homework component, and the higher of the two grades will be recorded. This policy should **not** be interpreted as a reason to skip the homework. Homework is the primary opportunity to practice the concepts and techniques introduced in class and is the best preparation for the daily quizzes and exams. Regardless of whether you choose to count homework toward your grade, you are expected to complete the assignments consistently throughout the semester. In practice, it is extremely difficult to succeed in this course without regularly working through the homework problems.

- **Optional Worksheets:** In addition to the online homework, there will also optional, ungraded be worksheets (along with complete solutions) posted on HuskyCT. These worksheets provide additional practice beyond the homework, and many of the problems are intentionally similar in style and difficulty to those you will encounter on quizzes and exams. Although these worksheets do not count toward your course grade, I **strongly encourage** you to work through them each week. Consistent practice is one of the most effective ways to master the material and prepare for the daily quizzes and exams. If time permits, we may also work through selected worksheet problems during class. If you would like feedback on your work, you are welcome to email me a PDF of your completed worksheet solutions. I will review your work, point out any errors, and provide guidance to help you improve your understanding.

- **In-Class Quizzes:** Short quizzes will be given at the **beginning** of most **Monday** class meetings throughout the semester. Quizzes are intended to encourage consistent preparation, assess your understanding of recently covered material, and provide regular feedback on your progress. Quizzes will generally be based on the assigned homework problems and will be similar in style and level of difficulty to the types of questions you should expect to see on course exams. Completing and understanding the homework is the best way to prepare for quizzes.
  - Unless otherwise announced, quizzes will primarily cover material from the previous week, although they may occasionally include cumulative material from earlier in the course.
  - The format of quizzes may vary throughout the semester. Depending on the learning objectives, a quiz may be closed-book, open-notes, completed individually, or completed in groups. The format and any permitted resources will be announced by the instructor.
  - Quizzes begin promptly at the scheduled start of class. Students who arrive after a quiz has begun may complete the quiz using only the remaining time. Students who arrive after the quiz has been collected will not be permitted to take the quiz and will receive a score of zero for that quiz.

- Because quizzes are frequent and intended to be low-stakes, the **three (3) lowest quiz scores will be dropped automatically when calculating your final course grade**. The dropped scores may include missed quizzes, late arrivals, or low scores.
- **No makeup quizzes will be given.** The three dropped quizzes are intended to provide flexibility for routine absences, illness, university-sponsored activities, or other unavoidable conflicts. Students should use these dropped scores to account for any missed quizzes during the semester. Students experiencing a prolonged, documented absence that exceeds the three dropped quizzes (such as an extended medical emergency or other University-approved absence) should contact the instructor as soon as possible to discuss appropriate accommodations.
- Unless explicitly permitted for a particular quiz, the use of unauthorized resources—including AI tools, internet resources, phones, smart devices, calculators (when prohibited), or assistance from others—is not permitted and will be handled in accordance with the University's Academic Integrity Policy.

- **Exams:** There will be three midterm exams a final take-home portfolio. The exam dates are listed below. You are **required** to take the exam during this time only. There will not be any makeup exams given. If there is an emergency and you must miss an exam, you will be responsible for notifying your instructor **ahead of time** or you will not get credit for that exam.
  - **Exam 1:** Monday 9/28/26
  - **Exam 2:** Wednesday 10/21/26
  - **Exam 3:** Wednesday 11/18/26

Tentative Outline		
Date	Section	Topic
Week 1	2.1/2.2	Three-Dimensional Coordinate Systems, Vectors
	2.3/2.4	The Dot Product/The Cross Product
Week 2		**No class Monday (Labor Day)**
	2.5/2.6	Equations of Lines, Planes, Cylinders, and Quadric Surfaces
Week 3	4.1/4.3	Functions of Several Variables/Partial Derivatives
	4.4	Tangent Planes and Linear Approximation
	4.5	The Chain Rule
Week 4	4.6/4.7	Directional Derivatives & the Gradient/Maxima and Minima
	Exam 1 Review	
Week 5	**Exam 1**	
	5.1/5.2	Double Integrals over Rectangular and General Regions
Week 6	5.3	Double Integrals in Polar Coordinates
	5.4	Triple Integrals in Cartesian Coordinates
Week 7	5.5	Triple Integrals in Cylindrical Coordinates/Spherical Coordinates
	5.7	Change of Variables in Multiple Integrals
Week 8	**Exam 2 Review**	
	Exam 2	
Week 9	3.1-3.4	Vector Functions, Arc Length, and Curvature
	6.1	Vector Fields
Week 10	6.2	Line Integrals
	6.3	Conservative Vector Fields
Week 11	6.4	Green's Theorem
	6.5	Curl and Divergence
Week 12	**Exam 3 Review**	
	Exam 3	
Week 13	**Thanksgiving Recess**	
Week 14	6.6 Part 1	Parametric Surfaces
	6.6 Part 2	Surface Integrals
Week 15	6.7/6.8	Stoke's Theorem /Divergence Theorem
		Final Exam Review
Week 16	**Finals Exam**	